IN THE CLAIMS

1. (Currently Amended) A method for converting single phase alternating current to multiple phase alternating current for simultaneously powering multiple vehicle systems comprising the steps of:

(a) producing single phase alternating current from a direct current source with pulse width modulation;

(b) splitting the single phase alternating current into a plurality of separate paths including at least a first path, a second path, and a third path;

(c) shifting the phase of the alternating current on the second path to be different than the phase of the first path and shifting the phase of the alternating current on the third path to be different than the phase of the first or second paths to create three-phase alternating current power; and

(d) operating vehicle systems with the three-phase alternating current power.

2. (Original) A method as recited in claim 1, wherein step (c) further includes shifting the phase of the alternating current for the second and third paths with lead/lag circuits.

3. (Original) A method as recited in claim 1, wherein step (b) is further defined as splitting the single phase alternating current into only three separate paths comprised of the first path, the second path, and the third path.

4. (Original) A method as recited in claim 3, wherein step (c) is further defined as maintaining the first path at a first phase corresponding to the phase of the single phase alternating current, shifting the single phase alternating current of the second path to a second phase different than the first phase, and shifting the single phase alternating current of the third path to a third phase different than the first or second phases.

5. (Original) A method as recited in claim 4 including the steps of shifting the second phase by approximately one hundred and twenty degrees (120°) compared to the first phase and shifting the third phase by approximately one hundred and twenty degrees (120°) compared to the second phase.

6. (Original) A method as recited in claim 5 including the steps of maintaining the first phase at approximately a zero degrees (0°) phase shift, maintaining the second phase at approximately a one hundred and twenty degrees (120°) phase shift, and maintaining the third phase at approximately a two hundred and forty degrees (240°) phase shift.

7. (Original) A method as recited in claim 1, wherein step (a) further includes producing single phase alternating current from a thirty-six volt (36V) battery power system.

8. (Original) A method as recited in claim 7 wherein step (b) further includes providing a single line for the single phase alternating current and tapping into the this same line at three different locations to create the first path, the second path, and the third path.

9. (Original) A method as recited in claim 8 wherein step (c) further includes shifting the phase of the alternating current for the second and third paths with inductors placed between the first and second paths on the single line and between the second and third paths on the single line.

10. (Original) A system for converting single phase alternating current to multiple phase alternating current to simultaneously power multiple vehicle systems comprising:

a direct current source;

a single pulse width modulation generator for converting direct current to alternating current to provide one power supply path of alternating current having a first phase;

a splitter for splitting said one power supply path of alternating current into a plurality of power supply paths including at least a first power supply path, a second power supply path, and a third power supply path;

at least one lead/lag circuit for shifting the alternating current of said second path to a second phase different than said first phase of said first power supply path;

at least one lead/lag circuit for shifting the alternating current of said third path to a third phase different than said first phase or said second phase; and

a plurality of induction motors for operating multiple vehicle systems via a three-phase alternating current power comprised of said first, second, and third paths.

11. (Original) A system as recited in claim 10, wherein said direct current source is a thirty-six volt (36V) battery power distribution system.

12. (Original) A system as recited in claim 11, wherein the second phase is shifted by approximately one hundred and twenty degrees (120°) compared to the first phase and the third phase is shifted by approximately one hundred and twenty degrees (120°) compared to the second phase.

13. (Original) A system as recited in claim 12, wherein the first phase is maintained at approximately a zero degrees (0°) phase shift, the second phase is maintained at approximately a one hundred and twenty degrees (120°) phase shift, and the third phase is maintained at approximately a two hundred and forty degrees (240°) phase shift to provide the three-phase alternating current power.

14. (Previously Presented) A method as recited in claim 1 including the step of generating direct current from a vehicle battery power distribution system prior to step (a).

15. (Previously Presented) A method as recited in claim 14 including the step of simultaneously providing twelve volt and thirty-six volt power from the vehicle battery power distribution system.

16. (Previously Presented) A method as recited in claim 1 wherein step (d) further includes using three-phase alternating current to power a plurality of induction motors for operating a plurality of vehicle systems including at least one of a power window closure, power seat, power lock, or power mirror system.

17. (Previously Presented) A method as recited in claim 1 including the step of using direct current and alternating current from a common vehicle battery power distribution system to operate vehicle systems.

18. (Previously Presented) A system as recited in claim 10 including a vehicle battery power distribution system including twelve volt and thirty-six volt power.

19. (Currently Amended) A system as recited in claim 18 wherein said vehicle battery power distribution system[[s]] utilizes three-phase alternating current and direct current to power a plurality of different vehicle systems.

20. (Previously Presented) A system as recited in claim 18 wherein said vehicle systems include at least one of a power window closure, power seat, power lock, or power mirror system.

21. (Previously Presented) A method as recited in claim 1 wherein step (a) further includes using a single pulse width modulation generator to provide one power supply path of alternating current.